



## ENVIRONMENTAL RESTORATION, LLC ACTION / WORK PLAN

**PROJECT NAME:** Barth Smelting Site  
**PROJECT LOCATION:** Newark, NJ

**CONTRACT No:** EP-S2-10-03  
**TASK ORDER No:** 076  
**ER PROJECT JOB No:** BS2-76

**DATE:** NOVEMBER 8<sup>TH</sup>, 2013

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### 1.0 SITE BACKGROUND

The Site is located in a mixed residential/industrial neighborhood within the Ironbound Section of Newark, Essex County, New Jersey. The site is bounded to the north and west by the Passaic River and the Essex County Riverfront Park and to the east by Chapel Street. The southern portion of the Site is located in the Terrell Homes, a public housing complex owned by the Newark Housing Authority (NHA). The Site includes the historic footprint of the former Barth Smelting Corporation located at 99 Chapel Street (Block 2442, Lots 10, 11, and 12) and the extent of contamination adjacent to the former facility, including a playground and grassy area adjacent to the community building on the NHA Terrell Homes property located at 59-97 Chapel Street.

Barth Smelting Corp. operated on Block 2442, Lots 10, 11, 12 from at least 1946 until approximately 1982, and produced brass and bronze ingots and also worked with non-ferrous metals. Prior operators include General Lead Batteries, a manufacturer of lead acid batteries, and the New Jersey Zinc Company, a former zinc smelter. Barth was listed as an unrecognized Battery Lead Smelter site with a paper titled "Discovering Unrecognized Lead Smelting Sites by Historical Methods" written by William Eckel et al, and published in the American Journal of Public Health, April 2001, however, several resources exist labeling Barth Smelting as a secondary copper smelting facility, and not a lead battery smelter. The New Jersey Zinc and Iron Company, also known as the Newark Zinc Works, formerly operated on the property now occupied by the Newark Housing Authority's Terrell Homes. The Zinc Works was one of the first commercial zinc oxide plants in the United States and operated on this location from 1848 to 1910.

The New Jersey Zinc and Iron Company initiated commercial-scale operations in 1852 and became established as a significant domestic zinc oxide and spiegeleisen (also known as pig iron) producer by 1855. Production at this plant was phased out in 1910 as the New Jersey Zinc smelter at Palmerton, PA expanded. The Millard E. Terrell Homes is a family development with 275 units built in 1946. The complex was opened on November 1, 1946 and was originally named for Franklin D. Roosevelt, but later took the name of one of its tenants, Millard E. Terrell, a man who committed his life toward community efforts.

A small recreational playground utilized by the Terrell Homes residents is located immediately adjacent the Barth Smelting Corporation facility on the northeast portion of the Terrell Homes property. EPA collected soil samples from this area in December 2012 to determine if the former operations at the Barth Smelting facility had impacted the soils. Elevated levels of lead were found to be present in the surface soils (0-2' depth interval) of the playground and the residential properties.

Thirty soil borings were installed throughout the Terrell Homes property from March 29 - April 1, 2013 to a depth of two feet. Elevated levels of lead, which pose a significant threat to the local residents, were detected in two soil borings installed in the grassy area immediately adjacent the Community Building, which serves as a recreational area for the residents and contains a water park area (sprinklers) for children to play outdoors and a basketball court. Additional sampling conducted in the grassy area



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adjacent the community Building in May 2013 determined that high concentrations of lead are present along the northern property line and extend approximately 25' onto the Terrell Homes property. A temporary chain link fence has been installed around the grassy area adjacent the sprinkler park and the former playground area to restrict access to these areas.

## 2.0 SCOPE OF WORK

### General Requirements:

- Provide site security and install security fencing as needed.
- Mobilize to site and set up work zones and decontamination area.
- Procure equipment, personnel, and electrical power service as needed.
- Clear vegetation as needed.
- Excavate contaminated surface soils as needed.
- Provide dust control and air monitoring.
- Backfill and grade excavated areas as needed.
- Dispose of hazardous substances at EPA-approved off-site disposal facilities.
- Repair response-related damages.
- Provide analytical laboratory for analysis of multi-media samples as needed.
- Demobilize personnel and equipment upon completion of site activities.
- Amendments may be added to this task order.

### Removal Action:

Environmental Restoration (ER) shall make available personnel, equipment and materials/supplies to perform the designated tasks within the Statement of Work (SOW):

- Provide office trailers, safety equipment and, portable bathrooms.
- Provide Response Manager to conduct initial and subsequent pre-planning site walks.
- Provide necessary utilities on-site as authorized.
- Mobilize the necessary resources to perform the task order's SOW.
- Clear and grub vegetation and debris as needed.
- Transport and treat/dispose of contaminated soil at CERCLA-approved disposal and/or recycling facilities
- Conduct restoration activities in areas disturbed/damaged by the removal activities
- Demobilize personnel and equipment from the site as resources are no longer required
- Provide to EPA copies of certificates of disposal and a disposal report

## 3.0 OPERATIONAL APPROACH

The following sections discuss ER's approach to the execution of the Task Order Statement of Work tasks. Significant tasks are identified with details on how ER will accomplish the SOW requirements.

### 3.1 PRE-MOBILIZATION ACTIVITIES

ER will prepare the following plans for submittal, review and acceptance by the US Environmental Protection Agency prior to site mobilization.

- ✓ Work Plan (contained herein)



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- ✓ Health and Safety Plan to be generated by Response Manager and reviewed and approved by ER Vice President of Health and Safety.

ER has begun identification, solicitation and procurement efforts to initiate the commencement of on-site operations. The following is an initial list of items to be identified and addressed prior to mobilization;

- ✓ Contact One Call with respective utilities on clearances/locates to ensure safe Site work zones.
- ✓ Identify subcontractors to provide backfill, stone and gravel resources
- ✓ Identify subcontractors to provide site security
- ✓ Identify subcontractors to clear trees as needed
- ✓ Identify potential T&D subcontractors and facilities that can accept, treat and/or dispose of the anticipated waste stream to be generated on-site.

### 3.2 MOBILIZATION

- Mobilization will occur primarily from ER's Binghamton, NY and Hartford, CT office locations, and shall consist of the Site Removal Team. The Removal Team shall consist of the Response Manager (RM), Field Cost Accountant (FCA), Equipment Operators (E/O), and Field Technicians (FT)

The initial mobilization will include site preparation and set-up activities including the mobilization of required site equipment, materials and support services identified to complete the startup of the project. The RM will directly coordinate with the OSC in determining resources required to perform the identified tasks.

### 3.3 SITE PREPARATION/ACCESS

ER will begin site preparations after initial mobilization to the site. Site preparations will be coordinated on-site including the following items;

- HASP review with site crew
- Perform site specific training with the crew
- Delineate Support Zone, Contamination Reduction Zone and Exclusion Zones
- Set up construction fencing around work site, and areas to be delineated
- Confirm identification and marking of underground utilities, review with on-site personnel
- Set up command post and support zone
- Delineate parking area for site crew vehicles
- Construct personnel decontamination station

### 3.4 EROSION CONTROL

During all intrusive site work, ER will install engineered erosion controls to control and mitigate runoff from the site, as well as at specified areas within the site and at active work areas. These controls will consist of silt fence and/or hay bales, with initial installations being concurrent with performing site preparation activities. Straw erosion control matting will be installed on the backfilled soils until restoration activities are completed in the spring. Additional installations will be conducted as required by site conditions or as directed by the OSC.



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Surface water runoff from the site onto adjacent properties or roads will be controlled and/or re-directed, as required, through the installation of retention berms, diversion swales, or through the installation of additional silt fence and hay bales.

All erosion and surface water runoff controls will be inspected daily at a minimum to assess their overall effectiveness and to ensure that they are in good repair. Additional materials will be staged onsite for required repairs or expansion.

Erosion control operations will include the following items;

- Install silt sacks in any site drains and/or catch basins (if present)
- Install silt fence down gradient from active work areas using excavator to trench in silt fence

### 3.5 DUST CONTROL

Throughout the duration of the project ER will continually perform dust suppression as needed to control any fugitive dust emissions. Water will be supplied by on-site garden hose connections located in the sprinkler park and adjacent apartment buildings. Dust suppression will be performed in accordance with the Community Air Monitoring Plan prepared by the EPA. In the event visible dust is generated, or there is an exceedance on the fence line monitors, all work will be halted to evaluate dust suppression techniques and or work being performed.

All stockpiled soils will be wetted throughout the operational period as needed, and each day covered with 6mil polysheeting and secured with sand bags.

In the event that emissions are present from the contaminated soil stockpile and create a high nuisance odor, the 6-mil poly sheeting cover will also aide in reducing the impact of the emissions and their associated odors. Again, each stockpile will be covered with 6-mil polysheeting at the end of each work day.

### 3.6 DECONTAMINATION OPERATIONS

Initially, a “dry” decon operation will be performed on the equipment and other large items staged on-site to address “gross decontamination”. Soil or other debris items scraped or otherwise removed from equipment will be collected and bulked with soil staged for offsite disposal. Dry decon methods using brushes, brooms, shovels, and scrapers will be used in preference to wet methods.

Should additional decontamination efforts be determined necessary, a “wet” decon will be implemented, with the generated decon liquids captured, collected, stored and re-used on-site as needed. The “wet” decon operations can involve either a low pressure washer or high pressure washer.

### 3.7 EXCAVATION OPERATIONS

The lateral limits of excavation will be marked out with stakes and caution tape and/or spray paint. At the end of each work day, the excavation work areas will be left in a neat, orderly fashion and in a secured state. Safety fence or other means to mark off any open excavation area will be placed. Likewise, all generated soil stockpiles will be secured and covered with 6-mil poly sheeting at the end of each work day.

All excavations will be supported by a spotter on the ground. The spotter will identify any changed soil content/conditions, as well as any drums, containers, and other wastes encountered during the excavation process and will point them out to the equipment operator. Recovered wastes will be



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segregated as required based on visual inspection, “real time” air monitoring results, condition of soils, encountered containers, or as directed by the OSC.

Excavations will further be supported by:

- Sloping and trenching methods – depth and soil conditions dependent
- Confined Space Entry methods/permits
- Staging area for bulk soils removed

Should a rain event, or excavation below the groundwater table occur during an active excavation or prior to backfilling an open excavation, de-watering operations will be performed. Based on the amount of water present, the water will be allowed to remain and drain through the soils at the base of the excavation. Should accumulated water quantities increase, the use of submersible pump/hoses with be implemented to transfer the water from the excavation and be discharged onto the ground on-site (if authorized by the OSC), or pumped into temporary storage units.

### **Excavation of Contaminated Soil**

The excavations may require the initial removal and stockpiling of “clean” soils prior to encountering potentially contaminated soils. These soils will be segregated and stockpiled near the excavation, for future use as backfill upon completion of the specific test excavation.

Contaminated soils encountered will be identified and removed, by either placing, and/or segregated by placing on a polysheeting liner or at a pre-designated staging area on-site. This stockpiling of soils will be inspected daily, and covered/secured daily. When the stockpiles are not covered during working hours, dust suppression techniques will be employed to prevent visible dust emissions.

### **3.8 TRANSPORTATION AND DISPOSAL**

The ER T&D Coordinator will assess and provide technical support for all phases of site operations with respect to transportation and waste identification, treatment and disposal. An initial site inspection may be performed at the request of the OSC by the T&D Coordinator to visually inspect existing waste streams and provide guidance regarding decontamination potential, delineating between non-hazardous and hazardous waste streams, determining and verifying waste characteristics, consolidation of wastes, sampling and analytical requirements, as well as coordinating planned excavation and other site operations.

The T&D Coordinator will provide support to site operations involving:

- Decontamination methods
- Waste/material segregation
- Waste/material consolidation
- Recycling/reclamation
- Treatment
- Sampling methods
- Hazardous Characterization (HAZCAT)
- Analytical Services
- Waste/material containerization
- Storage
- Off-site transportation
- Off-site disposal
- Scheduling coordinated with site operations (ie. live loading)
- Regulatory compliance



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- CERCLA Off-Site Compliance
- CERCLA Off-Site Disposal Reporting

The ER T&D Coordinator will verify the current CERCLA status of prospective disposal facilities in accordance with the EPA Offsite Rule. ER may use multiple vendors if it is in the best interest of EPA. The OSC will be consulted throughout the T&D process, so that the OSC can evaluate both schedule and budget in selecting the most cost-effective T&D strategy. The T&D Coordinator will coordinate with selected vendor(s) to ensure that all required paperwork is prepared for OSC signature prior to disposal, and will also ensure that all transporters are appropriately licensed and placarded in accordance with applicable DOT requirements.

### **CONTAMINATED SOIL**

The contaminated soil will be sampled, and removed as an on-going operation. Samples for disposal parameters will be based upon landfill or recycling facility requirements. Once sample results have been received and reviewed the T&D coordinator will solicit bids to disposal vendors, the RM will award bidder and bidder will prepare waste profiles for OSC approval, after facility approval load out of the soils will begin.

#### **Soil Disposal**

Soil will be loaded into tri-axle dump trucks and or dump trailers for off-site disposal. Truck tires will be inspected prior to transportation to ensure site contaminants are not introduced into clean areas. If required, tires will be brushed clean prior to clearing the truck to leave site. All trucks will be inspected and required to proceed through the site's decontamination station/pad.

### **3.9 SITE RESTORATION**

Clean backfill and topsoil will be sampled and procured for use during restoration activities following the local, state, and federal criteria for clean fill. Re-vegetation of the site including grass seeding, hydro-seeding, or installation of sod, trees, and shrubbery will be completed during seasons that will ensure proper germination and healthy growth.

Any site restoration operations will be determined and authorized by the OSC.

### **3.10 SITE DEMOBILIZATION**

Upon completion of all tasks, all site equipment and materials will be decontaminated. The site office trailer, facilities and utilities will remain on-site until future planned phased work is determined. Rented equipment will be returned to respective vendors. Site sanitary facilities will be maintained until all wastes are removed from the site. All site personnel, vehicles, and equipment will be dispatched back to their points of mobilization.

## 4.0 RESOURCES

The following table identifies the different resources ER will employ to complete the SOW elements.

PERSONNEL	QUANTITY	COMMENTS
Response Manager I	1	
Equipment Operator	2	
Laborer	1 - 2	
T&D Coordinator	1	
Health & Safety Mgr.	1	
Field Cost Administrator	1	
EQUIPMENT	QUANTITY	COMMENTS
Truck, P/U 4WD	2	
Skidsteer, rubber track	1	
Excavator	1	
Misc. Hand Tools	Lot	
OFCs	QUANTITY	COMMENTS
Silt fence	700 lf	
Fuel delivery	10 ea	
Backfill	TBD	
Loam	1,300 ton	
Seeding/Straw	TBD	
6-mil poly	2 - 3 rolls	
Analytical	10 ea	
T&D - soil	TBD	
Lodging	2-3 weeks	

## 5.0 SITE SCHEDULE

The site schedule will be based on the scope of work and tasks associated that meet the needs of the overall cleanup goals. Schedule is based on completing all on-site work in 2 – 4 weeks.

**Mobilization/Site Preparation** (estimated duration 1 day) ER will mobilize crew and supplies to site. Review HASP and site specific hazards with crew. Receive delivery of equipment, office trailer, porta-johns, etc. Assist vendors in gaining site access for deliveries as needed.

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Personnel Classification	Estimated Quantity
Response Manager Level I	1
Equipment Operator	2
Field Cost Administrator	1
Laborer	1
Ind Hygienist/Site Safety(off-site)	1
T&D Coordinator(off-site)	1
<b>Equipment Classification</b>	<b>Estimated Quantity</b>
Pickup Truck ½ ton 4 wheel drive	2
<b>Major Material/Supply Classification</b>	
First Aid Kit, Fire Extinguishers, Eye Wash, Emergency Warning Device	1
Misc. Hand and Power Tools, extension cords etc...	1
Traffic Cones, Road Signage, Caution/Danger Tape, high-vis fence	1
Spill Kit	1
Misc. poly sheeting, PPE, silt fence, etc..	1
Bottled Water	1

**Determine/delineate safe and unsafe areas within the site** can be completed concurrently with Site Preparation. Utilize caution tape and or high-visibility fencing to delineate work zones, wetland areas etc...

Personnel Classification	Estimated Quantity
Response Manager Level I	1
Equipment Operator	2
Field Cost Administrator	1
Laborer	1
Ind Hygienist/Site Safety(off-site)	1
T&D Coordinator(off-site)	1
<b>Equipment Classification</b>	<b>Estimated Quantity</b>
Rubber Track Skidsteer Loader	1
Excavator	1
Pickup Truck ½ ton 4 wheel drive	2
<b>Major Material/Supply Classification</b>	
First Aid Kit, Fire Extinguishers, Eye Wash, Emergency Warning Device	1
Misc. Hand and Power Tools, extension cords etc...	1
Traffic Cones, Road Signage, Caution/Danger Tape, high-vis fence	1
Spill Kit	1
Misc poly sheeting, PPE, silt fence, etc..	1
Bottled Water	1

**Soil Excavation** (estimated duration 1 week). Excavate soil as directed by the OSC. Live load and or stockpile soils in accessible area for future transportation and disposal.



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<b>Personnel Classification</b>	<b>Estimated Quantity</b>
Response Manager Level I	1
Equipment Operator	2
Field Cost Administrator	1
Laborer	1
Ind Hygienist/Site Safety(off-site)	1
T&D Coordinator(off-site)	1
<b>Equipment Classification</b>	<b>Estimated Quantity</b>
Excavator	1
Rubber Track skidsteer loader	1
Pickup Truck ½ ton 4 wheel drive	2
<b>Major Material/Supply Classification</b>	
First Aid Kit, Fire Extinguishers, Eye Wash, Emergency Warning Device	1
Misc. Hand and Power Tools, extension cords etc...	1
Traffic Cones, Road Signage, Caution/Danger Tape, high-vis fence	1
Spill Kit	1
Misc. overpacks, drums, poly sheeting, PPE, silt fence, etc..	1
Bottled Water	1

**Site Restoration and Demobilization** (estimated duration 1 - 2 weeks) Backfill excavated areas and repair response related damage as directed by OSC. Coordinate removal of equipment from site with vendors.

<b>Personnel Classification</b>	<b>Estimated Quantity</b>
Response Manager Level I	1
Equipment Operator	2
Field Cost Administrator	1
Laborer	1
Ind Hygienist/Site Safety(off-site)	1
T&D Coordinator(off-site)	1
<b>Equipment Classification</b>	<b>Estimated Quantity</b>
Excavator	1
Rubber Track Skid Steer	1
Pickup Truck ½ ton 4 wheel drive	2
<b>Major Material/Supply Classification</b>	
First Aid Kit, Fire Extinguishers, Eye Wash, Emergency Warning Device	1
Misc. Hand and Power Tools, extension cords etc...	1
Traffic Cones, Road Signage, Caution/Danger Tape, high-vis fence	1
Spill Kit	1
Misc. poly sheeting, PPE, silt fence, etc..	1
Bottled Water	1